

Module 12

Wrap up

CS 106 Winter 2016

Module 01

Processing Recap

- Values
- Types
- Expressions
- Statements
- Declarations
- Classes and objects

Module 02

Input/Output

- The filesystem
- Reading and writing images
- Reading and writing illustrations
- Reading and writing text

Module 03

User Interfaces

- Model-View-Controller
- Direct manipulation, hit testing
- User interface toolkits
- ControlP5

Module 04

Physics and Animation

- Why look at physics?
- Newton's first law; simulating constant speed
- Newton's second law; gravity, sliding, springs, damping
- Newton's third law; collisions
- Physics in 2D
- Physics engines, Fisica
- Animation principles and easing

Module 05

Geometric Context

- Why use geometric context?
- `translate()`, `rotate()`, `scale()`
- `pushMatrix()`, `popMatrix()`
- Combining transformations
- Hierarchical modelling

Module 06

Three-dimensional graphics

- Simple 3D primitives: `box()` and `sphere()`
- Geometric contexts in 3D
- Loading and displaying 3D models
- PeasyCam

Module 07

Recursion and fractals

- What is recursion?
- Three properties of every recursive function
- Using recursion to draw simple fractals

Module 08

Randomness and noise

- Random numbers aren't
- `random()`, `randomSeed()`
- `noise()`
- Combining recursion and randomness

Module 09

The shape of data

- What can we do with large amounts of data?
- Raw text
- Sequences
- Dictionaries
- Tabular data
- Hierarchical data
- Graph-structured data

Module 10

Text processing

- Using String and Character methods
- `split()`, `splitTokens()`, `equals()`, `startsWith()`, `endsWith()`, ...
- Storing words in dictionaries
- Regular expressions

Module 11

Structured data

- Loading tables, working with their contents
- Loading JSON Objects and Arrays, working with their contents
- Using Web APIs

The final exam

- Wednesday, April 13th, 9:00am-11:30am, PAC 11/12
- Similar in style to past exams
- Memorization is not the key

Study aids

- The midterm
- Last year's midterm and final
- Assignment and lab questions
- Last year's assignment and lab questions
- Practice programming exercises
- Clicker questions
- Final exam review
- Midterm review, last year's reviews
- Your imagination

Practice on paper, not
just in Processing

Processing problems

- Geared more towards practice than teaching
- Java is becoming a bit problematic
- But still a fun, practical tool, and useful for designers